Part 8 of 10

Discussion of Actual to Potential Test

Decided 9/15/00

applicable Alabama SIP provisions on PSD identified in the Regulation Stipulation ¶ 7, at 5.

Next, we begin our analysis of the parties' arguments regarding the emissions increase test applicable to the federal and state PSD and nonattainment NSR permitting programs by reviewing the applicable regulatory texts.

2. *Regulatory Emissions Increase Test: the "Actual-to-Potential" Test*

Throughout this discussion, because the state SIPs generally follow the federal NSR programs,[66] we will focus primarily on the federal PSD program requirements and identify in the citations or footnotes the parallel requirements under the state SIPs. For the federal PSD program, our discussion will be based upon the 1984 version of the Code of Federal Regulations. The parties have stipulated that the 1984 version of the Code of Federal Regulations contains the text applicable to the violations at Paradise Units 1, 2, and 3 with respect to NO_X emissions. These regulations are not directly applicable to any of the other violations, which are governed instead by the provisions of the state SIPs.

The federal PSD regulatory definition of "major modification" states that, to be included within the definition, a physical or operational change at the source must "result in a significant *net emissions increase*." 40 C.F.R. § 52.21(b)(2)(i) (emphasis added).[67] The phrase "net

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[66]As noted previously, the Alabama SIP's emissions increase test for the nonattainment NSR program prior to its amendment in 1983 was similar to the federal NSPS emissions increase test, not the federal PSD test. These pre-1983 nonattainment NSR provisions are only applicable to SO_2 emissions at Colbert Unit 5, which will be discussed in Part III.E below along with the alleged NSPS violations at Colbert Unit 5.

[67]Regulation Stipulation tab 1, § 16-77 (S1200-3-9-.01(4)) (Tennessee, Memphis/Shelby County); *id.* tab 2 (1200-3-9-.01(4)) (Tennessee); *id.* tab 14, § 16.4.2 (Alabama); *id.* tab 15, § 16.4.2 (Alabama); *id.* tab 15, § 16.3.2 (Alabama).

emissions increase" is separately defined in the regulations to require consideration of both "any increase in *actual emissions* from a particular physical change or change in method of operation" and any other "creditable" increases or decreases in actual emissions at the source within a "contemporaneous" period. *Id.* § 52.21(b)(3) (emphasis added).[68] The issues in the present case concern the first part of this definition (actual emissions from the physical change) and, thus, we need not discuss further the second part (creditable contemporaneous increases or decreases elsewhere at the source).[69]

The phrase "actual emissions" as used in the definition of "net emissions increase" is further defined in section 52.21(b)(21).[70] Generally, the definition of "actual emissions" requires calculation of the actual emissions prior to the physical or operational change, commonly known as the "baseline," which then is compared to the projected[71] emissions after the change. As explained more fully below, the regulations contemplate that the calculation of the pre-change emissions will be based upon data regarding the actual emissions during a two-year period prior to the change that is "representative" of normal operations. In contrast, with respect to the post-change emissions, EPA Enforcement has argued that, under certain circumstances, the post-change emissions are calculated based upon the changed unit's potential to emit.

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[68]For state SIP provisions, see *supra* notes 25, 67.

[69]TVA has argued that if it is required to submit permit applications for these projects, it should not be precluded from proposing increases or decreases elsewhere at the source. TVA Post-Hearing Brief at 108-10. These arguments will be considered below in Part III.G, where we address the Compliance Order's requests for relief.

[70]For state SIP provisions, see *supra* notes 25, 67.

[71]TVA argues that the post-change emissions should be calculated based on actual post-change operating data, rather than a projection of post-change emissions based on the information available to TVA at the time. This argument will be considered below in Part III.D.5.

During the time of the alleged violations in this case,[72] the definition of "actual emissions" stated in relevant part as follows:

> (i) Actual emissions means the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with paragraphs (b)(21)(ii)-(iv) of this section.
>
> (ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operations * * *.
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> * * * *
>
> (iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

40 C.F.R. § 52.21(b)(21)(i), (ii), (iv) (1984).[73] Under this definition, the pre-change "baseline" actual emissions are determined by the emission unit's recent operating history, as specified in subsection (ii). In this case, for the baseline calculation, the parties dispute whether the proper period is the two-year period immediately prior to the physical change or the two-year period with the highest emissions within the five years immediately prior to the modifications. These arguments will be discussed below in Part III.D.3.

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[72]The definition of "actual emissions" was amended in 1992 to, among other things, add an additional concept of "representative actual annual emissions." 57 Fed. Reg. 32,314 (1992). These amendments, however, are not directly applicable in this case as they were not incorporated by the relevant states into their SIPs at the time when TVA commenced construction of its projects.

[73]For state SIP provisions, see *supra* notes 25, 67.

With respect to the post-change "actual emissions," EPA Enforcement contends that the Agency consistently interpreted this pre-1992 definition to require a unit affected by a physical or operational change to be subject to subsection (iv). EPA Enforcement states that since the calculation would be performed before the unit had "begun normal operations" following the change, the unit's post-change "actual emissions" are presumed to be equivalent to the unit's "potential to emit." *See* 45 Fed. Reg. 52,676, 52,677 (1980) ("[T]he source owner must quantify the amount of the proposed emission increase. This amount will generally be the potential to emit of the new or modified unit."). This method of calculating the emissions increase by comparing actual emissions prior to the change with post-change potential emissions is commonly referred to as the "actual-to-potential" test.

TVA argues, on the other hand, that we should apply the reasoning of the Seventh Circuit in the *WEPCO* case and bar the use of post-change "potential" emissions. Instead, according to TVA, we should require use of post-change "actual" emissions in calculating whether the change resulted in an emissions increase. The parties' arguments on this issue will be discussed below in Parts III.D.4 and D.5.

In addition, TVA argues that the manner in which Congress enacted the PSD program in 1977 evinces an intention to incorporate a statutory requirement that any emissions increase be determined based upon whether the change resulted in an increase in the maximum hourly rate of emissions. Because this argument is presented as an issue arising under the statute, which TVA alleges must be applied independent of the regulatorily prescribed test, we will discuss this issue first.

Before turning to the parties' arguments, one additional aspect of the regulations must be noted. As noted above, the parties' arguments focus on the phrase "net emissions increase" and the subsidiary definitions that must be considered to understand its meaning. This phrase, as it is used in the definition of "major modification," is qualified by the word "significant." 40 C.F.R. § 52.21(b)(2) (referring to a "significant net emissions increase"). The term "significant" is separately defined in section 52.21(b)(23) as generally meaning 40 tpy

did not represent normal source operations." EPA Enforcement Ex. 277 at 31 (Van Gieson pre-filed testimony).

Given EPA Enforcement's inability to adduce evidence sufficient to overcome TVA's rebuttal evidence, we conclude, based on the evidence in the record of this case, that the two-year period having the highest emissions in the five-year period preceding the change is the most representative of normal source operations and shall be used as the baseline period for calculation of the pre-change emissions of the fourteen units at issue in this case. Although we rely on Mr. Houston's testimony in concluding that this period is most representative in this case, in our following discussion we will generally refer to Mr. Van Gieson's testimony and emission calculations as his testimony includes coverage of the emissions in this period and provides a clearer comparative framework. Mr. Houston did not provide testimony as to the post-change emissions calculation that, as discussed below, we find appropriate. Although there are some differences between the twenty-four month periods that Mr. Van Gieson and Mr. Houston concluded were the high-two-of-five for specific projects, such differences are not material. In addition, we note that both Mr. Van Gieson and Mr. Houston determined that the high-two-of-five period for some of the projects was, in fact, the two-year period immediately preceding the physical change.

Next, we turn to the issues regarding calculation of emissions attributable to the post-change period.

5. *Issues Regarding Post-Change Emissions: WEPCO Decision and Other Issues*

As noted above, the Agency historically has interpreted the definition of "actual emissions" as requiring post-change emissions for a unit that has been subject to a physical or operational change to be measured as the unit's potential to emit. In particular, the Agency has generally interpreted changed units as subject to subpart (iv) of the definition of "actual emissions." For ease of reference, that subpart states as follows:

> (iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

40 C.F.R. § 52.21(b)(21)(iv) (1989).[85] This subpart has been viewed as applicable to changed units under the notion that, when the preconstruction prediction of emissions is made, the unit to be affected by the change has not "begun normal operations" as a changed unit. As noted earlier in this decision, the method of calculating emissions increase based on these regulations as advocated by EPA Enforcement is referred to as the "actual-to-potential" test.

TVA argues in the present case that the actual-to-potential test for calculating whether an emissions increase will result from a physical change should not be applied to the changes made to the fourteen units at issue here. TVA first argues that, in *WEPCO,* the Seventh Circuit rejected application of the actual-to-potential test for replacement projects allegedly similar to those at issue in this case. *See* TVA Post-Hearing Brief at 63-66; *WEPCO*, 893 F.2d 901 (7th Cir. 1990). Second, TVA argues that it is inappropriate in a case, such as this one, arising years after the physical changes were completed, for the post-change emissions to be calculated based on a hypothetical projection of emissions (which we will refer to as a "retrospective prediction" method), when the post-change emissions can be calculated based on evidence of the post-change operations (we will refer to such a test based on operating data as a "actual-to-confirmed-actual" test). TVA Post-Hearing Brief at 66-71. These issues are discussed below.

a. *The Actual-to-Potential Test: WEPCO and the Region's Allegations in the Compliance Order*

As noted, TVA argues that we should adopt the analysis used by the Seventh Circuit in *WEPCO,* 893 F.2d 901 (7th Cir. 1990), and reject EPA Enforcement's analysis based on the actual-to-potential test. In the *WEPCO* case, the Seventh Circuit did not uphold the Agency's application of the actual-to-potential test to what the court referred to as

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[85]For state SIP provisions, see *supra* notes 25 & 67.

proposed "like-kind replacements" at a facility that had an extensive history of prior operations. Instead, noting that it had concerns regarding the "assumption of continuous operations" for a unit that had a prior operating history, the Court stated that "the EPA's reliance on an assumed continuous operation as a basis for finding an emissions increase is not properly supported." *Id.* at 918.

The projects at issue in WEPCO involved substantial renovations of five 80-MW coal-fired generating units at WEPCO's Port Washington electric power plant. All five of the units had experienced significant age-related deterioration that prevented them from being operated at their original capacity. *Id.* at 905-06. Indeed, one of the units, Unit 5, had been shut down completely due to the possibility of catastrophic failure if it were operated. *Id.* WEPCO's proposed renovation project would have enabled all five units "capable of generating at [their] designed capability until year 2010." *Id.* at 906.

When the court turned to its review of the Agency's determination that the proposed renovation projects would result in a "significant net emissions increase" under the PSD regulations, the court noted that "[i]n calculating the plant's post-renovation potential to emit, the EPA bases its figures on round-the-clock operations (24 hours per day, 365 days per year) because WEPCO could potentially operate its facility continuously, despite the fact that WEPCO has never done so in the past." *Id.* at 916. With this background, the court noted that it was "troubled by the EPA's assumption of continuous operations." It also stated, however, that "EPA cannot reasonably rely on a utilities' own unenforceable estimates of its annual emissions." *Id.* at 917. Nevertheless, it concluded that "we find no support in the regulations for the EPA's decision to wholly disregard past operating conditions at the plant." *Id.* It therefore held that "the EPA's reliance on an assumed continuous operation as a basis for finding an emissions increase is not properly supported." *Id.* at 918.

In the present case, TVA argues that use of the actual-to-potential test was "expressly repudiated by the Seventh Circuit in *WEPCO*," TVA Post-Hearing Reply Brief at 38, and that the *WEPCO* holding must be followed by the Board. *Id.* at 38 n.38. In contrast, EPA Enforcement argues that we should apply an actual-to-potential test in this case. EPA Enforcement Post-Hearing Brief at 73-90, 116-61; EPA